If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

7.1.19 Adsorber Bed A Online and Adsorber Bed B Offline

Text Pages 2 through 4

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

S. Sakry

7.1.19 Adsorber Bed A Online and Adsorber Bed B Offline

1. Purpose

This procedure provides instructions for placing adsorber bed A online and taking adsorber bed B offline. This procedure will be performed when adsorber bed B is contaminated and being taken offline for regeneration. The steps necessary to regenerate adsorber bed B are not covered under this procedure, please reference C-A OPM 7.1.22.

2. Responsibilities

2.1 The Shift Supervisor, or an Operator designated by the Shift Supervisor, is responsible for conducting the procedure and providing documentation in the Cryogenic Control Room Log and in the Cryogenic Valve Log.

2.2 Should a problem arise in the process of regenerating the adsorber bed, the Shift Supervisor shall report to the Technical Supervisor for instructions before continuing.

3. Prerequisites

3.1 The operator shall be trained by the Shift Supervisor.

3.2 Operator shall be familiar with the refrigerator P&ID drawing 3A995009, the physical location of components on the refrigerator, and the refrigerator control pages found on the CRISP control system. Valves and equipment mentioned in this procedure will be found on drawing 3A995009.

3.3 Adsorber Bed "A" has been regenerated per C-A-OPM 7.1.21, "Regeneration of Adsorber Bed "A"". Adsorber Bed "A" is clean and ready for service if inlet valve H362A is open and outlet valve H371A is closed.

3.4 The oxygen monitor and hygrometer in the compressor room shall be set to read the compressor discharge.

4. Precautions

4.1 If there is liquid helium in the refrigerator pots, all personnel entering the refrigeration wing of 1005R must be ODH Class 1 qualified, have a Personal Oxygen Monitor (POM), and carry an emergency escape pack.

5. Procedure

_____ 5.1 Date _____

_____ 5.2 Ensure instrument valve H365M is closed.

_____ 5.3 Ensure instrument valves H445M_____ H443M_____ and H370M_____ are open.

_____ 5.4 Ensure closed valves H9090M_____, H898M_____, and V263M_____.

_____ 5.5 Open valves H897M_____ and H9089M_____.

_____ 5.6 Crack open valve H899M.

_____ 5.7 Monitor TI369H, adjust valve H899M, as needed, to achieve a temperature drop of approximately 15°K/10 minutes.

_____ 5.8 Open valve H371A when TI369H is within 10°K of TI769H and below 100°K.

_____ 5.9 Should any sustained increase in the O2 or H2O monitors at compressor discharge appear, stop this procedure and regenerate adsorber "A" as per C-A-OPM 7.1.21.

_____ 5.10 Close valves H897M_____, and H899M_____.

_____ 5.11 Close valve H771A when TI369H and TI769H are equal and stable.

_____ 5.12 Close valve H762A.

_____ 5.13 Enable logic alarm on adsorber bed "A".

_____ 5.14 Open valve H9092M.

_____ 5.15 Crack open valve H9093M to vent adsorber.

_____ 5.16 When adsorber "B" is at approximately 10 atm, close valves H9093M_____.

_____ 5.17 When thawed, close valves H9089M_____ and H9092M_____.

_____ 5.18 If adsorber bed "B" was taken off line due to contamination, start regeneration process as specified in C-A OPM 7.1.22.

6. Documentation

6.1 The check-off lines on the procedure are for place-keeping only. The procedure is not to be initialed or signed, it is not a record.

6.2 The Shift Supervisor shall document the completion of the procedure in the Cryogenics Control Room Log.

7. References

7.1 Drawing 3A995009, 25kW Helium Refrigerator P&ID.

7.2 C-A-OPM 7.1.22, "Regeneration of Adsorber Bed "B".

7.3 C-A-OPM 7.1.21, "Regeneration of Adsorber Bed "A".

8. Attachments

None